Dual 100A 4/4 TPA/GMT Fuse Alarm Panel

Power :: 009-8005-3404

User Manual

Applys to : 009-8005-3404

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1.509.926.6000 :: telect.com

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Dual 100A 4/4 TPA/GMT Fuse Alarm Panel

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1.1 Overview

Telect's dual-input fuse alarm panel is a secondary power distribution panel containing four TPA and four GMT outputs per feed. Each feed (Side A and Side B) handles up to 100A.

Each side is electrically independent except for the common fuse alarm LED at the center of the panel. Power LEDs are provided for both inputs. Relay controlled alarm and power-fail contacts are provided for wiring to external indicators.

Hardware is included for flush or extended mounting in 19 in. or 23 in. relay racks. Visit our website for ordering Telect accessories and replaceable parts: TPA fuses (3A-50A), GMT fuses (¼-15A), ETSI mounting kit, and more.

Model 009-8005-3404 is UL listed, File E139903 V1 S9.

Figure 1 - Model 009-8005-3404

1.2 Inspection

Please read and understand all instructions before starting installation. If you have questions, contact Telect Technical Support at support@telect.com or call 1.509.926.6000.

When you receive the equipment, carefully unpack it and compare it to the packaging list. Please report any defective or missing parts to Telect at support@telect.com or call 1.509.926.6000.

Telect is not liable for transit damamged. If the product is damaged, please report it to the carrier and contact Telect.

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1.3 Specifications

Inputs:	Specifications:
Voltage & Range	-48Vdc, -40V to -60V
Max. Input Load Rating	100A per feed
Nominal Power Dissipation at Full Load	20W per feed @ 4800W full load per feed (100Ax48V)
Percentage of Full Load Power Dissipation at Nominal Voltage	less than 1%
Max. Input Interrupt Device	125A per BATT input
Input Terminal Studs (With KEPS Nuts & Washers) for Dual-Hole Compression Lugs	Two pairs of M5 studs per feed on 5/8 in. centers. Torque nut (using 8 mm or 5/16 in. socket) to ~20 in.-lb (~2.25 N•m).(MAX.LUG WIDTH 0.5 in)
Input Wire Size	#8 to #2 AWG (depends on each input interrupt device)
TPA Outputs:	**Specifications:**
Max. TPA Output Fuse (ea.)	50A
Max. TPA Output Load (ea.) - continuous	40A
Max. Total TPA Output Load	80A for Side A, 80A for Side B
TPA Output Terminals	16, #8 - 32 panhead screws (max. lug width of 0.375in. [0.96cm]). Torque screw to ~17 in.-lb (~1.70 N•m).
TPA Output Wire Size	#18 to #8 AWG (depends on output fuse rating)
Grounding:	**Specifications:**
Earth GND Terminal Studs (With KEPS Nuts and Washers) for Dual-Hole Compression Lug	M5 studs on 5/8 in. (1.59 cm) centers. Torque nut (using 8 mm or 5/16 in. socket) to ~20 in.-lb (~2.25 N•m).
Ground Wire Size	Up to #2 AWG (depends on combined capacity of input interrupt devices)
GMT Outputs:	**Specifications:**
Max. GMT Output Fuse (ea.)	15A
Max. GMT Output Load (ea.) - continuous	12A
Max. Total GMT Output Load	24A for Side A, 24A for Side B
GMT Output Terminals	16, #8 - 32 panhead screws (max. lug width of 0.375 in. [0.96cm]). Torque screw to ~17 in.-lb (~1.70 N•m)
GMT Output Wire Size	#18 to #8 AWG (depends on output fuse rating)

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Dual 100A 4/4 TPA/GMT Fuse Alarm Panel

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Alarms:	Specifications:
Alarm Relay Contacts	2A. @ 30 Vdc 0.6A @ 60 Vdc
Alarm Wire Size	#20 to #12 AWG
Alarm Terminals (Wire Binding)	6, #6 panhead screws (max. lug width of .32 in. [.81 cm])
Dimensions:	**Specifications:**
Nominal, without brackets:* Width Height Depth * See Page 13 for exact dimensions	 17.25 in (43.8 cm) 1.75 in (44.4 cm) 8.5 in. (21.6 cm)
Weight:	**Specifications:**
Weight, Without Packaging	~14 lb (~6 kg)
Weight, Shipping	~15 lb (~7 kg)
Environment:	**Specifications:**
Operating Temperature Range	-10°C (14°F) to 55°C (131°F)

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1.4 Installation Procedure

ALERT

ALERT! Only qualified personnel may install and maintain this product. Verify that all connections meet the requirements specified in local electric codes or operating company guidelines before supplying power. Protect this equipment with a fuse or breaker sufficient to interrupt power levels specified on preceding page.

Panel brackets provide either flush or extended EIA or WECO mounting in a 19 in. or 23 in. rack. (See telect.com to order ETSI brackets.) The panel is configured at the factory for flush mounting in a 19-in. rack.

1. If necessary, remove three screws and reposition/re-align the brackets on the sides of the distribution panel, as shown in Figure 2.
2. Locate an unused rack position and mount the panel using the four screws and lock washers provided, as shown in Figure 3. (It's best to mount the panel as high as possible on the rack.)
3. Tighten the screws to 35 in.-lb (4.29 N•m).

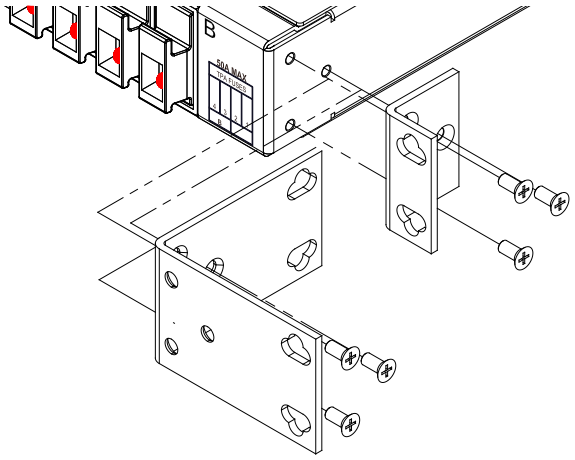

Figure 2 - Bracket Orientation

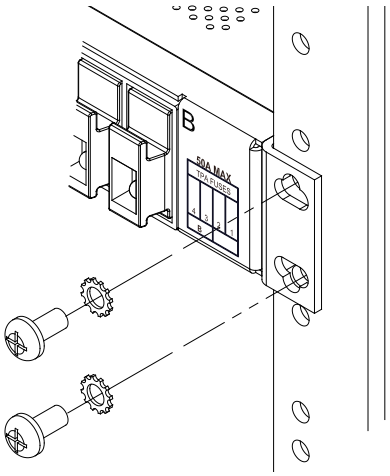

Figure 3 - Rack Mounting

4. Loosen (you need not remove) the two screws securing the rear terminal cover on the back of the panel.
5. Remove the cover.

WARNING

WARNING! Failure to properly ground this equipment can create hazardous conditions to installation personnel and to the equipment.

ALERT

ALERT! Only use components and crimping tools approved by agencies or certifying bodies recognized in your country or region such as Underwriter's Laboratories (UL), TUV, etc.

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6. Use a listed (approved) crimping tool to attach a listed (approved), dual-hole compression lug onto suitable ground wire. (Size of ground depends on input interruption device.) Check local codes and/or operating company guidelines for proper ground wire and lug size.
7. Telect recommends that you lightly coat anti-oxidant on the lug, grounding terminal, and surrounding contacting surface.
8. Connect the lug to the terminal using the M5 KEPS nuts and flat washers provided, as shown in Figure 4.
9. Tighten the KEPS nuts to 20 in.-lb (2.25 N•m)

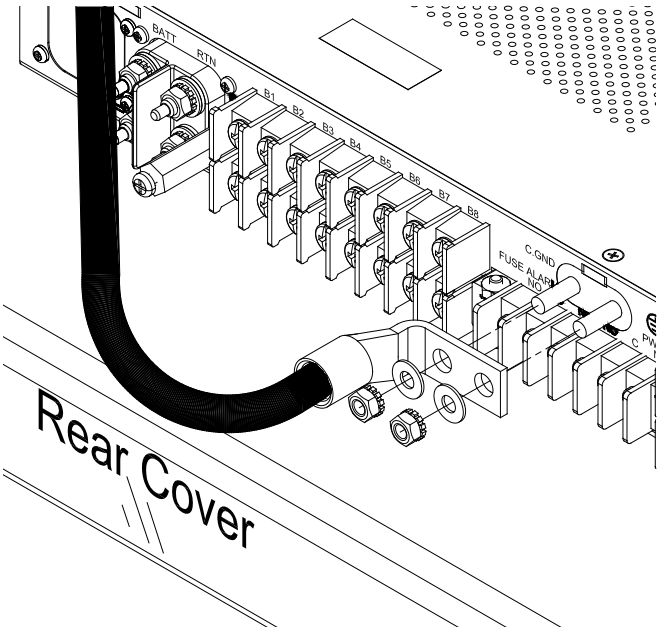

Figure 4 - Ground Lug Connection

⚠ WARNING

WARNING! Before connecting input power cables, make sure input power to panel is turned off.

10. Make sure the input power is off (open breaker, dummy fuse, or open the fuse holder at the power distribution unit [PDU]) before connecting this panel's input cables to the PDU.
11. For input wiring — wiring used as inputs to this distribution panel — crimp the dual-hole compression lugs onto #8 AWG to #2 AWG copper wires.
12. Insulate the lug barrels with UL 94V-0 rated heat shrink tubing.
13. Clean the terminals and lugs with a non-abrasive, non-metallic pad.
14. Telect recommends a light coating of anti-oxidant on the lugs and input **BATT** and **RTN** terminals before connecting the input terminals on the back of the panel, as shown in Figure 5.
15. Tighten the lugs to ~20 in.-lb (~2.25 N•m).
16. Make sure the TPA and GMT fuse positions are either empty or contain dummy fuses (phoney, inoperative all plastic slugs).

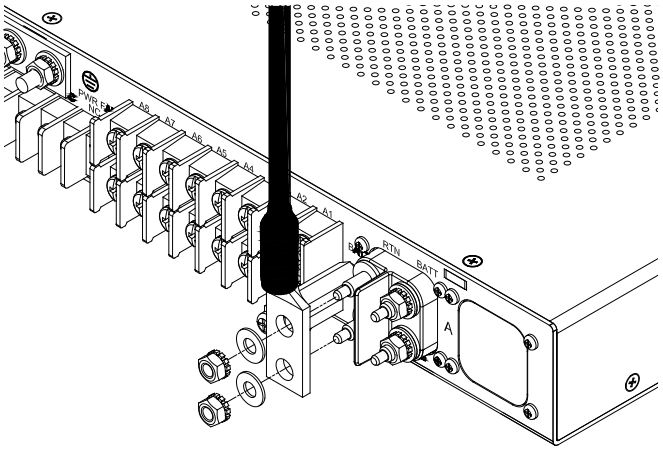

Figure 5 - Input Lugs

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If necessary, pull out the TPA carrier about an inch from its holder to disengage the TPA fuse, as shown in Figure 6.

17. Enable the fuse or breaker at the PDU to turn on Feed A to Side A of the panel and then measure the voltage and check polarity at input connectors of panel. Also, check that
    - **INPUT POWER A** LED on front of panel turns on (green). (See Figure 7 for location.)
    - All other LEDs must be off.
18. With the **INPUT POWER A** lit (normal operation) — but with all other LEDs off (failure operation) — test the power-fail relay contacts at the rear of the panel:
    - Expect an open circuit (00Ω) between Terminals **C** and **NC**.
    - Expect continuity (0Ω) between Terminals **C** and **NO**.
19. Also, test the fuse alarm relay contacts at the **FUSE ALARM** terminals on the rear of the panel.
    - Expect continuity (0Ω) between Terminals **C** and **NC**.
    - Expect an open circuit (00Ω) between Terminals **C** and **NO**.
20. Repeat Steps 17 through 19 to power up Side B.
21. With all **INPUT POWER** LEDs lit (normal operation), test power-fail relay and contacts at **PWR FAIL** terminals on the rear of the panel.
    - Expect continuity (0Ω) between Terminals **C** and **NC**.
    - Expect an open circuit (00Ω) between Terminals **C** and **NO**.
22. Make sure none of the fuse positions are engaged or contain operable fuses.
23. For output wiring, crimp single-hole lugs onto one

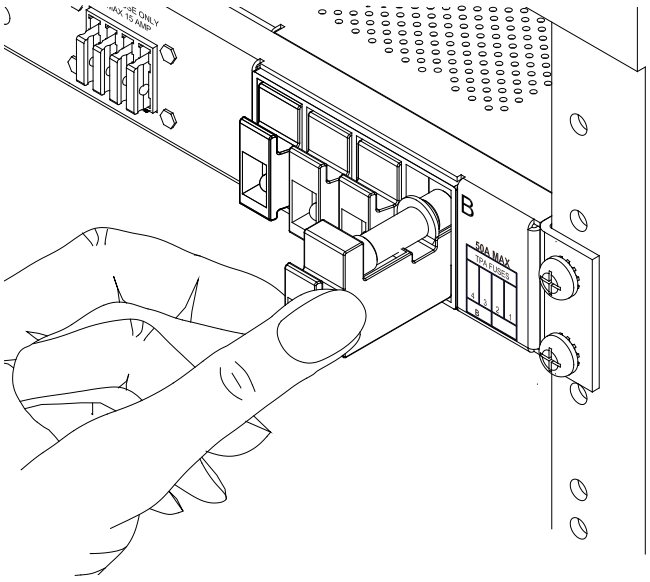

Figure 6 - Disengaging a TPA Fuse Holder

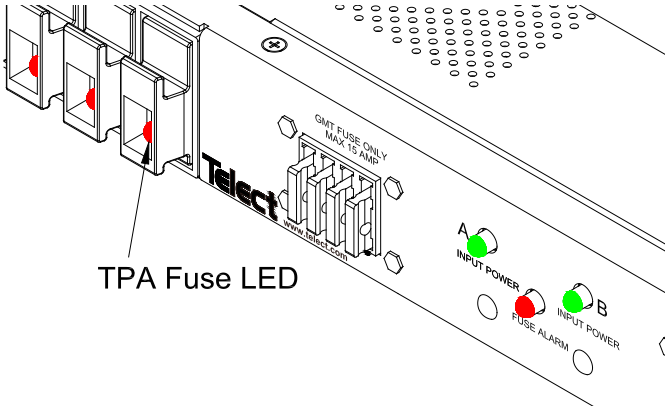

Figure 7 - Alarm Indicators

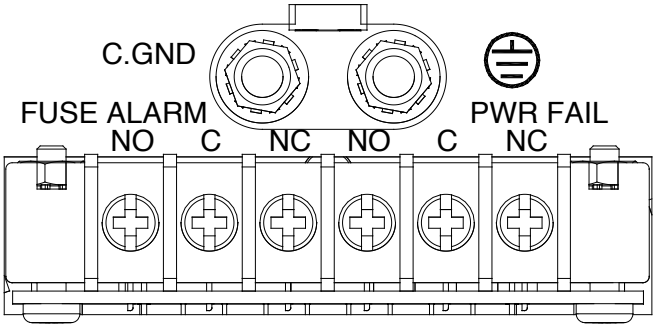

Figure 8 - Alarm Terminals

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end of #18 AWG to #8 AWG copper output wires, as required by NEC. (Work with one output wire at a time.)

24. Clean the panel terminals and lugs with a non-abrasive, non-metallic pad.
25. Remove the panhead screw on the terminal block.
26. Telect recommends a light coating of anti-oxidant on lugs and output **BATT** and **RTN** terminals before connecting lugs to terminals, as shown in Figure 9. (NEC specifies only one lug and load at each output terminal.)
27. Tighten the screw to 17 in.-lb (~1.7 N•m).
28. Connect the other end of the output wire to load.

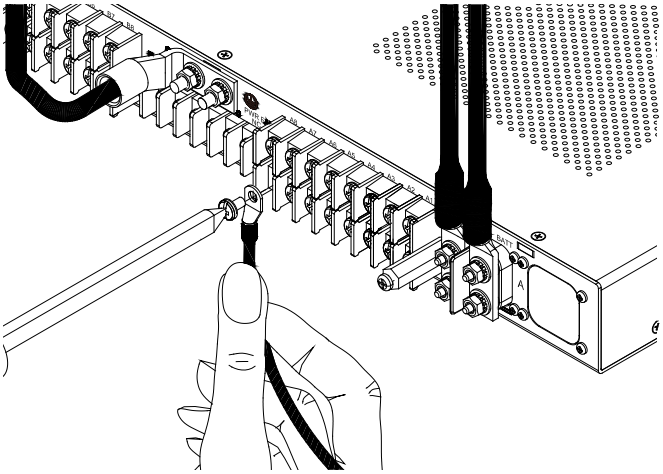

Figure 9 - Output Lug Connections

ALERT

ALERT! Local electrical and operating company guidelines recommend that the individual load not exceed 80% of over-current device capacity (for example, 50A TPA fuse x .80 = 40A max. load). Total load for all TPA & GMT outputs on each side must not exceed 100A.

29. Make sure the load devices are disabled and then install the fuses.

    NOTE: Under load, TPA modules are disconnect devices only and must not be used to reconnect power to enabled equipment loads. Reconnecting a TPA module under power with an enabled load may damage the TPA module.

- For a TPA fuse, pull out TPA fuse carrier and insert operable fuse, as shown in “Installing TPA Fuses” illustration.
- For a GMT fuse, pull out dummy fuse, and insert operable fuse, as shown in Figure 11.

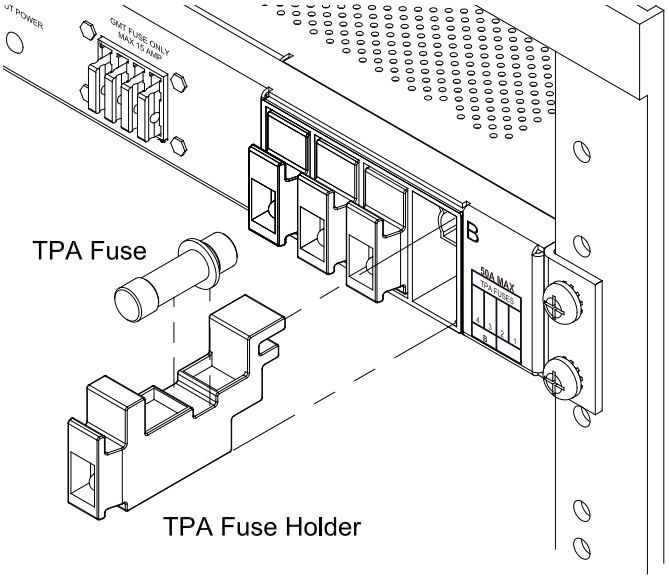

Figure 10 - Installing TPA Fuses

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30. Check the voltage and polarity at the input of each equipment load.
31. If possible,
    - Temporarily replace one of the operable TPA fuses with a blown fuse to check that the **FUSE ALARM** and the TPA Fuse LEDs light red. Also, check the **FUSE ALARM** terminals on the rear of the panel:

      – Expect an open circuit (00Ω) between Terminals **C** and **NC**.
      – Expect continuity (0Ω) between Terminals **C** and **NO**. Re-install the operable TPA fuse before proceeding.
    - Likewise, replace one of the operable GMT fuses with a blown fuse to verify that the **FUSE ALARM** LED and **FUSE ALARM** terminals are also as specified above. Re-install an operable GMT fuse before proceeding.
32. If desired, connect remote external audio/visual alarm indicator wires (solid or tinned wires, #20 to #12 AWG) to the **PWR FAIL** and **FUSE ALARM** terminals, as shown in Figure 12.
33. Carefully re-install the rear cover.
34. Record the TPA and GMT output destinations on designation labels on the front panel.
35. Turn on equipment loads one at a time to verify proper operation of loads.

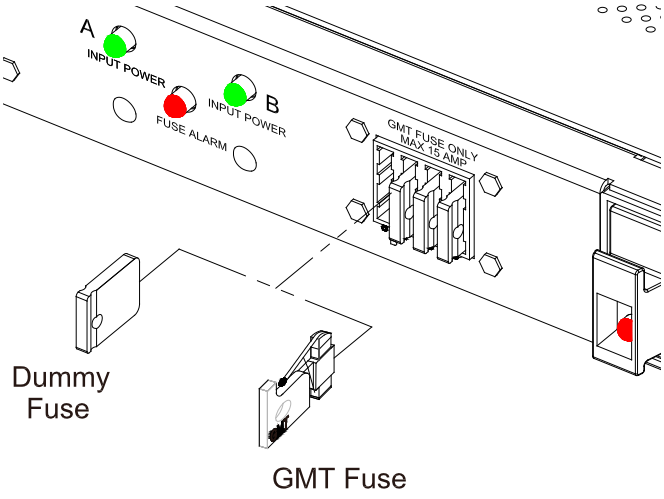

Figure 11 - Installing GMT Fuses

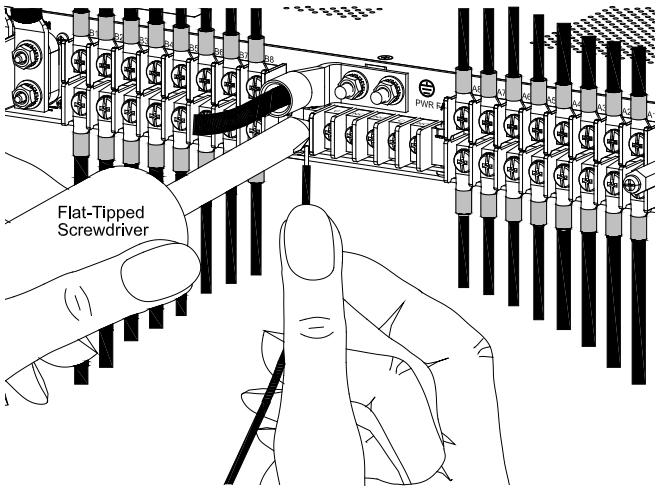

Figure 12 - Installing Alarm Wiring

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1.5 Compression Lugs

ALERT

ALERT! Only use components and crimping tools approved by agencies or certifying bodies recognized in your country or region such as Underwriter's Laboratories (UL), TUV, etc.

Table 1 - Input Power Lugs (M5 Dual Holes on 5/8 in. Centers, Uninsulated)

	#8 AWG	#6 AWG	#4 AWG	#2 AWG
T & B	542040410 (T & B Die Code 21)	256-30695-1070 (T & B Die Code 24)		
Burndy	YA8LC-2TC14 (Burndy Die Code 49)	YA6CL-2TC14 (Burndy Die Code 7)	YA4C-2L (Burndy Die Code 8)	YA2CL2NT14* (Burndy Die Code 10)
Panduit	LCD8-14A-L (Panduit/T&B Die Code 21) (Burndy Die Code 49)	LCD6-14A-L (Panduit/T&B Die Code 24) (Burndy Die Code 7)		LCDN2-14A-Q* (Panduit/T&B Die Code 33) (Burndy Die Code 10)

* Narrow tongue

Table 2 - Right-angle Ground Lugs (M5 Dual Holes on 5/8 in. Centers, Uninsulated)

	#8 AWG	#6 AWG	#4 AWG	#2 AWG
T & B		256-30695-1356 (T & B Die Code 24)		
Burndy	YA8LC-2TC14-90 (Burndy Die Code 49)	YA6CL-2TC14-90 (Burndy Die Code 7)	YA4C-2L-90 (Burndy Die Code 8)	YA2CL2NT14-90 (Burndy Die Code 10)
Panduit	LCD8-14AF-L (Panduit/T&B Die Code 21) (Burndy Die Code 49)	LCD6-14AF-L (Panduit/T&B Die Code 24) (Burndy Die Code 7)		LCDN2-14AF-Q* (Panduit/T&B Die Code 33) (Burndy Die Code 10)

* Narrow tongue

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Table 3 - Output Ring Lugs for #8 Screw Terminals (Loose Pieces Available in Small Quantities Up to 100 Count)

	#18 AWG	#18-16 AWG	#16 AWG	#16-14 AWG	#14-12 AWG	#12-10 AWG	8 AWG
Panduit	PN18-8R-C			PN14-8R-C		PN-10-8R-L	
AMP			320554	53941-2		50845-135787	
Burndy		YAE18N4BOX		YAE14N1BOX	YAE12NBOX		
T & B							KN8-8R-D

1.6 Accessories

The following lists optional and replacement items for the panel. For compression lugs, please refer to Wire Sizing &, Label Convention Chart (Telect Part No. 117995) included with your panel

Item	Description	Part Number
TPA Fuses	5A	124818
	10A	124819
	15A	124820
	20A	124821
	30A	122734
	40A	122738
	50A	122739
GMT Fuses	¼A Violet (VIO)	100151
	½A Red (RED)	004001
	¾A Brown (BRN)	004008
	1A Gray (GRY)	100991
	1 1/3A White (WHT)	004006
	1½A White/Yellow (WHT/YEL)	004011
	2A Orange (ORN)	004002
	3A Blue (BLU)	004012
	4A White/Brown (WHT/BRN)	004013
	5A Green (GRN)	004014
	7½A Black/White (BLK/WHT)	004010
	10A Red/White (RED/WHT)	004015
	12A Yellow/Green (YEL/GRN)	102287
	15A Red/Blue (RED/BLU)	102288
	Dummy, Phoney, Plastic Slug	132748
	Safety Covers	116915

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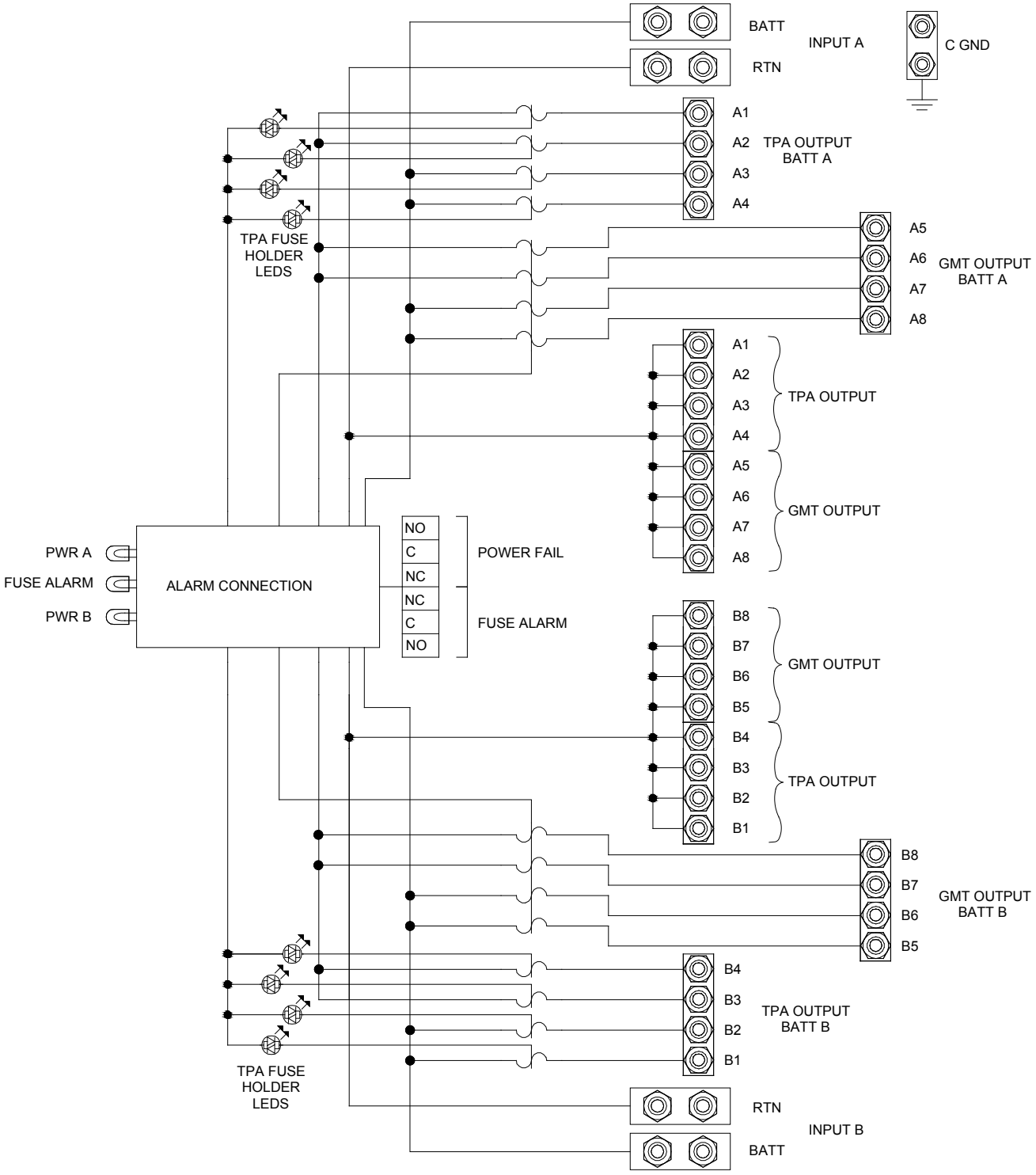
1.7 Schematic Drawing



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Dual 100A 4/4 TPA/GMT Fuse Alarm Panel

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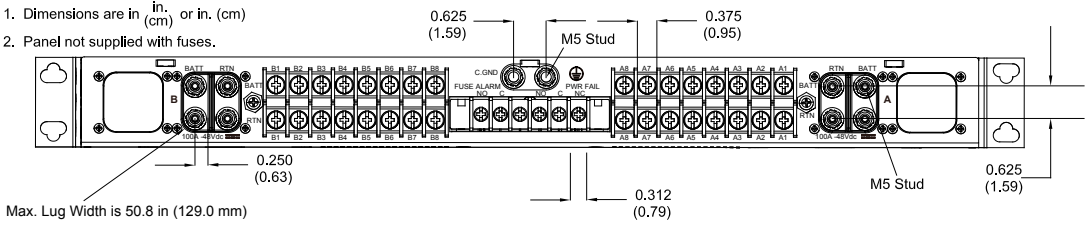
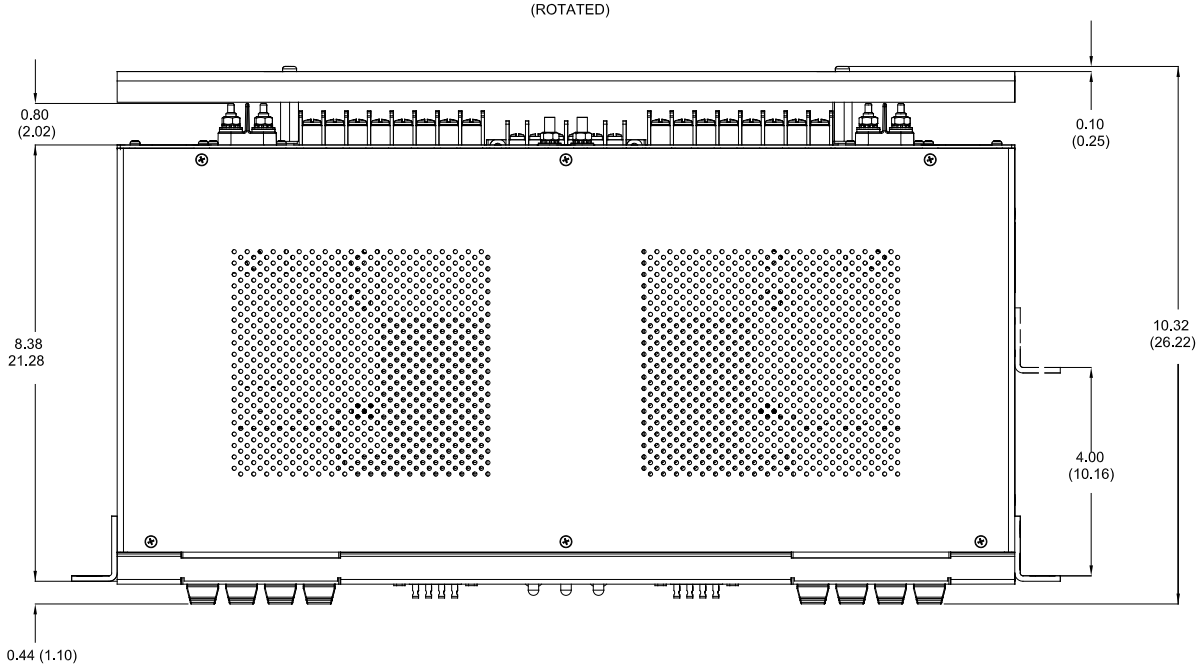
1.8 Assembly Drawing

NOTES:

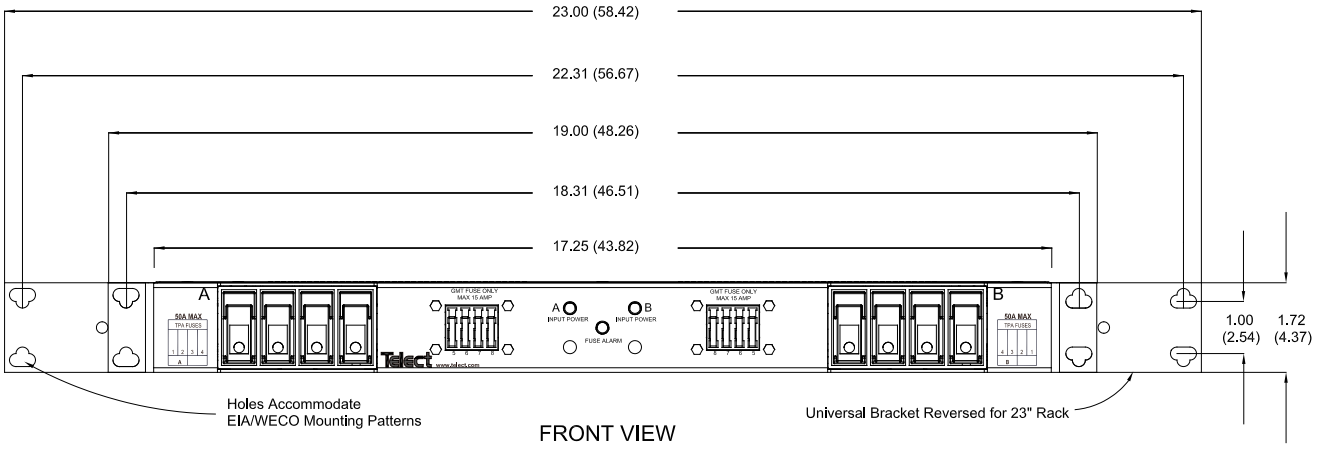
1. Dimensions are in in. (cm) or in. (cm)
2. Panel not supplied with fuses.



REAR VIEW
(ROTATED)



TOP VIEW



FRONT VIEW

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